

## CLAIMS

### What is claimed is:

1. A method of manufacturing reflective multi-layered thin film mirror for extreme  
5 ultraviolet radiation exposure processes using atomic force microscopic lithographic  
technology comprising:

(a) depositing a reflective multi-layered thin film and a capping layer on a  
silicon substrate;

(b) depositing a thin metal film selected from the group consisting of  
10 chromium, tantalum, and tungsten as an absorber layer on said multi-layered thin  
film and said capping layer;

(c) selectively forming metal oxide structures with fixed height and width on  
substrates by applying electric field between cantilever tip and said multi-layered 硃  
수정) structure of the substrate using an atomic force microscope; and

15 (d) forming ultra-fine line width absorber patterns by etching of said metal  
oxide structure.

2. In Claim 1, said method further comprises a step of depositing of thin  
organic film as a resistant material on said thin absorber metal film after the step of  
20 depositing a thin metal film as an absorber layer, and is characterized by washing off  
of this thin organic film after etching of said metal oxide structure.

3. In Claim 1, said forming of metal oxide structure comprises a step of controlling pattern sizes via adjustment of applied voltage, lithographic speed and humidity.

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